

WHAT IS CLAIMED IS:

1. A data processing apparatus, comprising:

an input portion;

an output portion;

a plurality of compressing/expanding devices which compress data-to-be-outputted inputted from said input portion and expand compressed data-to-be-outputted;

a file memory which stores said data-to-be-outputted compressed by some or all of said plurality of compressing/expanding devices;

a data discrimination portion which discriminates whether said data-to-be-outputted inputted from said input portion is data including a small amount of information or a large amount of information; and

a transfer controller,

wherein, in cases where it is discriminated by said data discrimination portion that said data-to-be-outputted is data including a small amount of information, said transfer controller transfers said data-to-be-outputted to said output portion through said plurality of compressing/expanding devices operating in parallel, and

wherein, in cases where it is discriminated by said data discrimination portion that said data-to-be-outputted is data including a large amount of information, said transfer controller

transfers said data-to-be-outputted to some or all of said plurality of compressing/expanding devices while transferring said data-to-be-outputted to said output portion.

2. The data processing apparatus as recited in claim 1, further comprising a compressing/expanding controller,

wherein, in cases where said data-to-be-outputted is data including a small amount of information, said compressing/expanding controller assigns some of said plurality of compressing/expanding devices to compressing operation and assigns some or all of the other of said plurality of compressing/expanding devices to expanding operation, and

wherein, in cases where said data-to-be-outputted is data including a large amount of information, said compressing/expanding controller assigns all of said plurality of compressing/expanding devices to compressing operation at the time of compressing said data-to-be-inputted and to expanding operation at the time of expanding said data-to-be-outputted.

3. The data processing apparatus as recited in claim 2, further comprising an output discrimination portion which discriminates whether an outputting operation of said output portion is a first set of outputting operation or a second or subsequent set of outputting operation,

wherein, in cases where said data-to-be-outputted is data

including a small amount of information, if it is discriminated by said output discrimination portion that said outputting operation of said output portion is a first set of outputting operation, said transfer controller transfers said data-to-be-outputted inputted from said input portion to a file memory through some of said plurality compressing/expanding devices assigned to compressing operation and further transfers said data-to-be-outputted to said output portion through some or all of the other of said plurality of compressing/expanding devices assigned to expanding operation, and if it is discriminated by said output discrimination portion that an outputting operation of said output portion is a second or subsequent set of outputting operation, said transfer controller transfers compressed data-to-be-outputted stored in said file memory to said output portion through said some or all of the other of said plurality of compressing/expanding devices assigned to expanding operation, and

wherein, in cases where said data-to-be-outputted is data including a large amount of information, if it is discriminated by said output discrimination portion that said outputting operation of said output portion is a first set of outputting operation, said transfer controller transfers said data-to-be-outputted inputted from said input portion to a file memory through all of said plurality compressing/expanding devices assigned to compressing operation while transferring said data-to-be-outputted to said output portion, and if it is discriminated by

said output discrimination portion that said outputting operation of said output portion is a second or subsequent set of outputting operation, said transfer controller transfers compressed data-to-be-outputted stored in said file memory to said output portion through all of said plurality of compressing/expanding devices assigned to expanding operation.

4. The data processing apparatus as recited in claim 1, wherein said data-to-be-outputted including a small amount of information is monochrome data and said data-to-be-outputted including a large amount of information is color data, and wherein said data discrimination portion discriminates whether said data-to-be-outputted is said monochrome data or said color data.

5. The data processing apparatus as recited in claim 1, wherein said data-to-be-outputted including a small amount of information is binary data and said data-to-be-outputted including a large amount of information is multi-valued data, and wherein said data discrimination portion discriminates whether said data-to-be-outputted is said binary data or said multi-valued data.

6. The data processing apparatus as recited in claim 5, wherein said binary data includes binarized color data.

7. The data processing apparatus as recited in claim 2,

wherein, in cases where said data-to-be-outputted is data including a small amount of information, said compressing/expanding controller further changes operational assignment of said plurality of compressing/expanding devices depending on an amount of information.

8. A data processing method, comprising:

discriminating whether data-to-be-outputted is data including a small amount of information or a large amount of information;

executing compressing operation of said data-to-be-outputted and expanding operation of compressed data-to-be-outputted by a plurality of compressing/expanding devices operating in parallel and thereafter executing outputting operation of expanded data-to-be-outputted in cases where it is discriminated that said data-to-be-outputted is data including a small amount of information; and

executing compressing operation of said data-to-be-outputted while executing outputting operation of said data-to-be-outputted in cases where it is discriminated that said data-to-be-outputted is data including a large amount of information.

9. The data processing method as recited in claim 8,

wherein, in cases where it is discriminated that said data-to-be-outputted is data including a small amount of

information, some of said plurality of expanding/compressing devices are assigned to compressing operation and some or all of the other of said plurality of expanding/compressing devices are assigned to expanding operation, and

wherein, in cases where it is discriminated that said data-to-be-outputted is data including a large amount of information, all of said plurality of expanding/compressing devices are assigned to compressing operation at the time of compressing said data-to-be-inputted and to expanding operation at the time of expanding said data-to-be-inputted.

10. The data processing method as recited in claim 9,

wherein it is discriminated whether said outputting operation is a first set of outputting operation or second or subsequent set of outputting operation,

wherein, in cases where said data-to-be-outputted is data including a small amount of information, if it is discriminated that said outputting operation is a first set of outputting operation, said inputted data-to-be-outputted is transferred to a file memory through some of said plurality compressing/expanding devices assigned to compressing operation and then outputted through some or all of the other of said plurality of compressing/expanding devices assigned to expanding operation, and if it is discriminated that said outputting operation is a second or subsequent set of outputting operation, said compressed data

stored in said file memory is outputted through said some or all of the other of said plurality of compressing/expanding devices assigned to expanding operation, and

wherein, in cases where said data-to-be-outputted is data including a large amount of information, if it is discriminated that said outputting operation is a first set of outputting operation, inputted data-to-be-outputted is transferred to a file memory through all of said plurality compressing/expanding devices assigned to compressing operation while transferring said data-to-be-outputted to an output portion, and if it is discriminated that said outputting operation is a second or subsequent set of outputting operation, compressed data stored in said file memory is transferred to said output portion through all of said plurality of compressing/expanding devices assigned to expanding operation.

11. The data processing method as recited in claim 8, wherein said data-to-be-outputted including a small amount of information is monochrome data and said data-to-be-outputted including a large amount of information is color data, and wherein data discrimination is performed by discriminating whether said data-to-be-outputted is said monochrome data or said color data.

12. The data processing method as recited in claim 8, wherein said data-to-be-outputted including a small amount of information

is binary data and said data-to-be-outputted including a large amount of information is multi-valued data, and wherein data discrimination is performed by discriminating whether said data-to-be-outputted is said binary data or said multi-valued data.

13. The data processing method as recited in claim 12, wherein said binary data includes binarized color data.

14. The data processing method as recited in claim 9, wherein, in cases where said data-to-be-outputted is data including a small amount of information, operational assignment of said plurality of compressing/expanding devices is changed depending on an amount of information.

15. An image forming apparatus, comprising:

a scanner which outputs an original image by converting into electronic data with a photoelectric transferring element;

an input port which receives a print job from an external device including a computer and a facsimile apparatus;

an input adjusting portion which receives a scanned image job outputted from said scanner and a print job inputted into said input port;

a plurality of compressing/expanding devices which compress data-to-be-outputted included in a job inputted from said input adjusting portion and expand compressed data-to-be-outputted;

a storage which stores said compressed data-to-be-outputted;
a printer which prints out data-to-be-outputted included in said print job or said scanned image job on a sheet;

a data discrimination portion which discriminates whether said data-to-be-outputted is data including a small amount of information or a large amount of information; and

a transfer controller,

wherein, in cases where it is discriminated by said data discrimination portion that said data-to-be-outputted is data including a small amount of information, said transfer controller transfers said data-to-be-outputted to said printer through said plurality of compressing/expanding devices operating in parallel, and

wherein, in cases where it is discriminated by said data discrimination portion that said data-to-be-outputted is data including a large amount of information, said transfer controller transfers said data-to-be-outputted to some or all of said plurality of compressing/expanding devices while transferring said data-to-be-outputted to said output portion.

16. The image forming apparatus as recited in claim 15, further comprising a compressing/expanding controller,

wherein, in cases where said data-to-be-outputted is data including a small amount of information, said compressing/expanding controller assigns some of said plurality of compressing/expanding

devices to compressing operation and assigns some or all of the other of said plurality of compressing/expanding devices to expanding operation, and

wherein, in cases where said data-to-be-outputted is data including a large amount of information, said compressing/expanding controller assigns all of said plurality of compressing/expanding devices to compressing operation at the time of compressing said data-to-be-inputted and assigns all of said plurality of compressing/expanding devices to expanding operation at the time of expanding said data-to-be-outputted.

17. The image forming apparatus as recited in claim 16, further comprising an output discrimination portion which discriminates whether an outputting operation of said printer is a first set of outputting operation or a second or subsequent set of outputting operation,

wherein, in cases where said data-to-be-outputted is data including a small amount of information, if it is discriminated by said output discrimination portion that said outputting operation of said printer is a first set of outputting operation, said transfer controller transfers said data-to-be-outputted to said storage through some of said plurality compressing/expanding devices assigned to compressing operation and further transfers said data-to-be-outputted to said printer through some or all of the other of said plurality of compressing/expanding devices

assigned to expanding operation, and if it is discriminated by said output discrimination portion that said output from said printer is a second or subsequent set of output, said transfer controller transfers compressed data-to-be-outputted stored in said storage to said printer through said some or all of the other of said plurality of compressing/expanding devices assigned to expanding operation, and

wherein, in cases where said data-to-be-outputted is data including a large amount of information, if it is discriminated by said output discrimination portion that said outputting operation of said printer is a first set of outputting operation, said transfer controller transfers said data-to-be-outputted to said storage through all of said plurality compressing/expanding devices assigned to compressing operation while transferring said data-to-be-outputted to said printer, and if it is discriminated by said output discrimination portion that said outputting operation of said printer is a second or subsequent set of outputting operation, said transfer controller transfers compressed data-to-be-outputted stored in said storage to said printer through all of said plurality of compressing/expanding devices assigned to expanding operation.

18. The image forming apparatus as recited in claim 15, wherein said data-to-be-outputted including a small amount of information is monochrome data and said data-to-be-outputted

including a large amount of information is color data, and wherein said data discrimination portion discriminates whether said data-to-be-outputted is said monochrome data or said color data.

19. The image forming apparatus as recited in claim 15, wherein said data-to-be-outputted including a small amount of information is binary data and said data-to-be-outputted including a large amount of information is multi-valued data, and wherein said data discrimination portion discriminates whether said data-to-be-outputted is said binary data or said multi-valued data.

20. The data processing apparatus as recited in claim 19, wherein said binary data includes binarized color data.

21. The data processing apparatus as recited in claim 16, wherein, in cases where said data-to-be-outputted is data including a small amount of information, said compressing/expanding controller further changes operational assignment of said plurality of compressing/expanding devices depending on an amount of information.